

VOL'FSON, F.I.; LUKIN, L.I.; DYUKOV, A.I.; KUSHMAREV, I.P.; PEK, A.V.;  
 RYBALOV, B.L.; SONYUSHKIN, Ye.P.; KHOROSHILOV, L.V.; CHEZNYSHEV,  
 V.F.; BIRYUKOV, V.I.; GARMASH, A.A.; DRUZHININ, A.V.; KARAMYAN,  
 K.A.; KUZNETSOV, K.F.; LOZOVSKIY, V.I.; MALINOVSKIY, Ye.P.;  
 NEVSKIY, V.A.; PAVLOV, N.V.; ROMENSON, B.M.; SAMONOV, I.Z.;  
 SIDORENKO, A.V. [deceased]; SOPKO, P.F.; CHEGLOKOV, S.V.; YUDIN,  
 B.A.; KREYTER, V.M., doktor geologo-mineral.nauk, retsenzent; ..  
 KOTLYAR, V.N., doktor geologo-mineral.nauk, retsenzent; GRUSHEVOY,  
 V.G., doktor geologo-mineral.nauk, retsenzent; MAKOVNIK, N.I., doktor  
 geologo-mineral.nauk, retsenzent; KUREK, N.N., doktor geologo-mineral.  
 nauk, retsenzent; LIIGEN'KIY, S.N., retsenzent; SHATALOV, Ye.T., doktor  
 geologo-mineral.nauk, red.; KRISTAL'NIY, B.V., red.; SERGEYEVA, N.A.,  
 red.izd-va; GUROVA, O.A., tekhn.red.

[Basic problems and methods of studying structures of ore provinces  
 (Continued on next card)]

VOL'FSCN, F.I.---(continued) Card 2.

and deposits] Osnovnye voprosy i metody izucheniia struktur rudnykh polei i mestorozhdenii. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po geol. i okhrane neдр, 1960. 623 p.

(MIRA 13:11)

1. Akademiya nauk SSSR. Institut geologii rudnykh mestorozhdeniy, petrografii, mineralogii i geokhimii. 2. Moskovskiy institut tsvetnykh metallov i zolota (for Dyukov, Biryukov, Druzhinin, Kuznetsov). 3. Institut mineralogii, geokhimii i kristalloghimii redkikh elementov AN SSSR (for Garmash). 4. Akademiya nauk Armyanskoy SSR (for Karayyan). 5. Balezoloto (for Sidorenko). 6. Institut geologii rudnykh mestorozhdeniy, petrografii, mineralogii i geokhimii AN SSSR (for Malinovskiy, Nevskiy, Pavlov, Chernyshev). 7. Moskovskiy geologorazvedochnyy institut im. S.Ordzhonikidze (for Ronenson). 8. Vsesoyuznyy nauchno-issledovatel'skiy institut mineral'nogo syr'ya (for Samonov). 9. Voronezhskiy universitet (for Sopko). 10. Kol'skiy filial AN SSSR (for Yudin).

(Ore deposits)

SMIRNOV, V.I.; PROKOF'YEV, A.P.; BORZUNOV, V.M.; DYUKOV, A.I.; ZHDANOV, M.A.; LYUBIMOV, I.A.; NEKIPSELOV, V.Ye.; PLOTNIKOV, N.A.; ANTEROPOV, P.Ya., glavnyy red.; FEDOTOVA, A.I., red.izd-va; GUROVA, O.A., tekhn.red.

[Estimation of reserves of mineral deposits] Podschat zasov mestorozhdenii poleznykh iskopaemykh. Pod red. V.I.Smirnova i A.P.Prokof'eva. Glav.red. P.IA.Antropov. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po'geol. i okhrane neдр, 1960. 671 p.  
(MIRA 14:1)

(Mines and mineral resources)

DYUKOV, A.I.; TARKHOV, A.G.

"Geophysical methods in areal structural geology" by B.A.Andreev.  
Reviewed by A.I.Diukov, A.G.Tarkhov. Izv.vys.ucheb.zav.; geol.i  
razv. 6 no.3:133-135 Mr '63. (MIRA 16:5)

1. Moskovskiy geologorazvedochnyy institut imeni S.Ordzhonikidze.  
(Prospecting--Geophysical methods)  
(Andreev, B.A.)

DYUKOV, A.I.; SHCHEGOLEV, D.I.

Basic trends in training specialists for engineering geology.  
Sov.geol. 6 no.4:155-159 Ap '63. (MIRA 16:4)

1. Redaktsionnaya kollegiya zhurnala "Sovetskaya geologiya".  
(Engineering geology)

SHATALOV, Ye.T.; ORLOVA, A.V.; YABLOKOV, K.V.; DYUKOV, A.I.;  
TOMSON, I.N.

[Basic principles of the plotting, content, and conditional designations of the metallogenic and forecasting maps of ore regions] Osnovnye printsipy sostavleniia, sodержanie i uslovnye oboznacheniiia metallogenicheskikh i prognoznykh kart rudnykh raionov; osnovnye printsipy metallogenicheskikh issledovaniĭ i sostavleniia metallogenicheskikh i prognoznnykh kart rudnykh raionov. [By] E.T.Shatalov i dr. Moskva, Nedra, 1964. 193 p. .... [Supplement] Prilozheniia.

(MIRA 18:5)

DUBINSKIY, A. Ya.; DYUKOV, A.I.

Northern margin of the Donetsk trough (avlakogen). Sov. geol.  
7 no.5:3-14 My '64 (MIRA 18:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskiy institut i Moskovskiy gosudarstvennyy geologorazvedochnyy institut imeni S. Ordzhonikidze.

KRASNIKOV, Vladimir Ivanovich (1906-1962), prof., doktor geol.-  
miner. nauk; DYUKOV, A.I., otv. red.; KAZHDAN, A.B., otv.  
red.; PEREL'MAN, A.I., red.; SHARKOV, Yu.V., red.

[Fundamentals of an efficient method of prospecting for  
ore deposits] Osnovy ratsional'noi metodiki poiskov rud-  
nykh mestorozhdenii. 2. izd. Moskva, Nedra, 1965. 398 p.  
(MIRA 18:12)

NEVOLIN, N.V.; KASATKIN, D.P.; KIREYCHEV, V.D.; KANDINOV, N.N.; LEVITON,  
M.Ye.; RTISHCHEVA, V.F.; TROITSKIY, V.N.; DYUKOV, A.I.

Structure of the recent relief of the surface basement of the  
Russian Platform. Sov.geol. 8 no.2:82-90 F '65.

(MIRA 18:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut geofizicheskikh  
metod razvedki.

5  
L 00202-67 EMP(d)/EMP(c)/EMP(v)/EMP(k)/EMP(h)/EMP(l)  
ACC NR: AP6029901 (A, N) SOURCE CODE: UR/0413/66/000/015/0193/0193

INVENTORS: Putayn, D. P.; Gusev, A. I.; Filatov, G. V.; Dartau, A. N.; Mazayov, A. N.; Novak, G. A.; Yelagin, P. Ya.; Khvatov, A. I.; Dyukov, A. I.; Khropik, B. A.

ORG: none

TITLE: A shop for assembling large structures of flying machines. Class 62,  
No. 184130 14

SOURCE: Izobret prom obraz tov zn, no. 15, 1966, 193

TOPIC TAGS: construction machinery, aircraft

ABSTRACT: This Author Certificate presents a shop for assembling large structures of flying machines. The shop contains columns sunk into the foundations, horizontal beams fixed on top of the columns, cups with fixing devices, and clevises holding receptors and wedges. To shorten the assembly time and to rearrange the shop repeatedly, bearing plates are fixed to the columns, beams, and cups. These plates have a network of coordinating holes which receive pins connecting the plates to one another. The fixing devices of the cups are tied to the coordinating holes in the spacing strip placed in an aperture in the beam. The bottom of this

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UDC: 629.13.01/06

L 09262-67

ACC NR: AP6029981

aperture also contains coordinating holes for fixing the separating strip to the plate of the horizontal beam.

SUB CODE: 01/13/ SUBM DATE: 01Mar65

3

DYUKOV, G. P., ZABIYAKIN, G. I., SHIBAYEV, Y. D., and SHTRANIKH, I. V.

"Multichannel Recording Systems on Magnetic Tape with Averaging of Statistical Data"

Joint Institute of Nuclear Research, Dubna, USSR

report submitted for the IAEA conf. on Nuclear Electronics, Belgrade, Yugoslavia  
15-20 May 1961

DYUKOV, I. A.

"Problem concerning the influence of flexure of meridian circle and zenith-telescope on the results of observations by the Sanders-Raymond method," Astron. Zhur., 19, Nos 2-3, 1942.

Report U-1518, 23 Oct 1951

DYUKOV, I. A.

PA 65T96

USSR/Physics

Mar/Apr 1948

Refraction, Astronomical  
Refractometer

"A New Type of Meridian Ring," I. A. Dyukov, Astron  
Obs, Kazan, 5 pp

"Astron Zhur" Vol XXV, No 2

New instrument requires no equality of zenith dis-  
tances. Thus no complex calculations are necessary  
before making observations. Instrument can be used  
effectively to study refraction anomalies and their  
seasonal variations. Submitted Jun 1946.

65T96

DYUKOV, I. A.  
Professor-doktor

E1.R  
E5.R

Kazanskiy gosudarstvennyy universitet.

Author of article:

" Iz opyta attestatsii aspirantov".

Attestation of student-aspirants has important  
significance ... also for appraisal of their  
pedagogic work."

Source: Vestnik Vysshej Shkoly, No. 5, 1949, pp. 36-37.  
Izdatel'stvo, " Sovetskaya Nauka " .

P-5028

Dyukov, I.A.

MERLIN, V.S.; MARTYNOV, D.Ya., otvetstvennyy redaktor; MARKOV, M.V., professor, redaktor; SHAFUGULLIN, A.G., professor, redaktor; ARBUZOV, B.A., professor, redaktor; DYUKOV, I.A., professor, redaktor; NORDEN, A.G., professor, redaktor; PISAREV, V.I., professor, redaktor; TIKHVINSKAYA, Ye. I., professor, redaktor; ABDRAKHMANOV, M.I., dotsent, redaktor; MOROZOV, D.G., dotsent, redaktor; KHARITONOV, A.P., dotsent, redaktor; KOLOBOV, N.V., redaktor; KOLESHNIKOVA, Ye.A., starshiy prepodavatel', redaktor; ROZHDESTVENSKIY, B.P., dotsent, redaktor.

[Peculiarity of conditioned reactions in the structure of a voluntary act] Svoobrazie usloynykh reaktsii v strukture volevogo akta. Kazan', 1953. 123 p. (Kazan. Universitet. Uchenye zapiski, vol.113, no.3)

(MLRA 10:3)

1. Rektor universiteta (for Martynov); 2. Prorektor po nauchnoy rabote (for Markov); 3. Prorektor po uchebnoy rabote (for Shafugullin). 4. Sekretar' partbyuro universiteta (for Kolobov)

(CONDITIONED RESPONSE) (WILL)

DIUKOV, I.A.  
 MADANOV, P.V.; MARTYNOV, D.Ya., otvetstvennyy redaktor; MARKOV, M.V., professor, redaktor; SHAFUGULLIN, A.G., professor, redaktor; ARBUZOV, B.A., akademik, redaktor; DIUKOV, I.A., professor, redaktor; NORDEN, A.P., professor, redaktor; PISAREV, V.I., professor, redaktor; TIKHVINSKAYA, Ye.I., professor, redaktor; ABDRAKHMANOV, M.I., dotsent, redaktor; MOROZOV, D.G., dotsent, redaktor; KHARITONOV, A.P., dotsent, redaktor; KOLOBOV, H.V., redaktor; KOLESNIKOVA, Ye.A., starshiy prepodavatel', redaktor; VINOKUROV, M.A., professor, redaktor.

[Biological accumulation of manganese in soils of the Volga-Kama forest-steppe and its availability to plants] Biologicheskaya akumulatsiya margantsa v pochvakh Volzhsk-Kamskoi lesostepi i ego dostupnost' sel'skokhoziaistvennym rasteniyam. Kazan', 1953. 202 p. (Kazan. Universitet. Uchenye zapiski, vol.113, no.7) (MIRA 10:3)

1. Rektor universiteta (for Martynov). 2. Proroktor po nauchnoy rabote (for Markov). 3. Proroktor po uchebnoy rabote (for Shafugullin)
4. Sekretar' partbyuro universiteta (for Kolobov).  
 (Plants, Effect of manganese on)  
 (Volga Valley--Forest soils)

*DYUKOV, I.A.*

DYUKOV, I.A., professor.

Observations of lunar occultations of stars at Kazan' Municipal  
Astronomical Observatory. Astron.tsir. no.147:19 Mr '54.(MLRA 7:8)

1. Direktor Kazanskoy gorodskoy astronomicheskoy observatorii.  
(Occultations)

DYUKOV, I.A.

Flexure of the Kazan meridian circle in the years 1932-1935.  
Uch.zap.Kaz.un. 116 no.1:66-68 '55. (MLRA 10:5)

1. Kafedra astronomii.

(Astronomical instruments)

GAYVORONSKIY, A.A., nauchnyy sotrudnik; DYUKOV, L.M., nauchnyy sotrudnik.

Combating water infiltration. Neftianik 1 no.1:15-16 Ja '56.  
(MLBA 9:7)

1.Vsesoyuznyy nauchno-issledovatel'skiy institut bureniya nefti.  
(Oil well drilling)

*D YUKOV, L.M.*  
GAYVORONSKIY, A.A.; DYUKOV, L.M.; PRUTYANOV, I.P.

Cementing absorption zones. Neftianik 2 no.12:10-12 D '57.

(MIRA 11:2)

1. Sotrudniki Vsesoyuznogo nauchno-issledovatel'skogo instituta  
Burtsekhnik.

(Oil well cementing)

BRONZOV, A.S.; ~~DYUKOV, L.M.~~ KOPYLOV, Yu.M.; ONISHCHENKO, M.S.; VASIL'YEV, Yu.S.

Device for determining the angle of gradient of a well bore.

Biul. nauch.-tekhn. inform. VIMS no.2:77 '63. (MIRA 18:2)

DYUKOV, L.M.; VOLKOV, V.I.; SEMENOV, Yu.D.

Evaluating the drillability of rocks on the basis of geophysical  
data. Trudy VNIIBT no.14:106-112 '65. (MIRA 18:5)

MALYUTOV, Midkhat Rakhmatullich; BERKOVICH, Mikhail Yakovlevich;  
DYUKOV, L.M., red.

[Methods of correcting unsatisfactory cementing during  
oil well drilling] Metody ispravleniia neudachnykh tse-  
mentirovani pri burenii skvazhin. Moskva, Nedra, 1965.  
107 p. (MIRA 18:12)

SUKHANOV, A.F., prof. , doktor tekhn. nauk; NAZAROV, P.P., kand. tekhn. nauk  
KUTUZOV, B.N., kand. tekhn. nauk; DYUKOV, N.G., inzh.

Using cone bits in boring blast holes in asbestos quarries.  
Stroi. mat. 5 no.10:26-28 0 '59. (MIRA 13:2)  
(Asbestos) (Boring machinery)

KONSTANTINOV, L.P., inzh.; MOKSHIN, A.S., inzh.; PEREGUDOV, A.A., inzh.;  
ABRAMSON, M.G., kand. tekhn. nauk; ANDREYEV, A.V., inzh.; DYUKOV,  
N.G., inzh.; MIRONOV, A.L., inzh.; OSIPOV, G.M., inzh.

Studying the performance of pin roller bits in strip mining and  
ways of improving their design. Gor. zhur. no.9:42-46 S '65.

(MIRA 18:9)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut burovoy tekhniki,  
Moskva.

1. DYUKOV, N. N.
2. USSR (600)
4. Seeds
7. Sowing with large graded seeds is a way to increase yield. Dost. sel'khoz. No. 1, 1952.

9. Monthly List of Russian Accessions, Library of Congress, January 1953. Unclassified.

ALESENKO, N.N.; DYUKOV, P.A.

The duty of every telecommunication worker is to produce work of a high quality. Vest. sviazi 23 no.7:19-20 J1 '63.(MIRA 17:2)

1. Nachal'nik smeny Kiyevskogo tsentral'nogo telegrafa (for Ale-senko). 2. Pomoshchnik nachal'nika smeny Kiyevskogo tsentral'no-go telegrafa (for Dyukov).

DYUKOV, Rostislav Arsen'yevich, inzh.; KUBIKINA, Ye., red.

[Replacing cast parts with forged and welded ones;  
practice of the Kaliningrad Railroad Car Plant] Zamena  
lit'kh detalei shtamposvarnymi; opyt Kaliningradskogo  
vagonostroitel'nogo zavoda. Kaliningrad, Kaliningrad-  
skoe knizhnoe izd-vo, 1964. 28 p. (MIR: 18:1)

1. Kaliningradskiy vagonostroitel'nyy zavod (for Dyukov).

DYUKOV, R. F.

Use of a grass cover crop in the taiga subzone of Siberia. Sov. agron. 10,  
No 8, 1952.

Country : USSR  
Category: Cultivated Plants. Commercial. Oil-Bearing.  
Sugar-Bearing.

M

Is Javr: RZhBiol., No 11, 1958, No 49027

Author : Dyukov, R.F.  
Inst : Penza Agricultural Inst.  
Title : On the Quality of Hemp in the Penzenskaya Oblast.

Orig Pub: Sb. tr. Penzensk. s.-kh. in-ta, 1956, vyp. 1,  
31-38

Abstract: In field tests carried out in 1954, with the cultivation of hemp for fiber and seeds, a thick, dense planting increased the harvest of straw compared with a thin sowing in dual rows. It also increased the fiber content in the straw. The quality of the fibers (strength and number), too, was higher.

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Country : USSR

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Category: Cultivated Plants. Commercial. Oil-Bearing.  
Sugar-Bearing.

Abs Jour: RZhBiol., No 11, 1958, No 49027

If the diameter of the stems is larger, the number of elementary fibers increases, but without ascertained uniformity. It is concluded that under the conditions of Penzenskyaya Oblast, when sowing in double straight rows, the manner of sowing in dense rows cannot be excluded, since high harvests of seeds and fiber are then obtained. -- A.M. Smirnov

Card : 2/2

M-108

DYUKOV, V.

Reconstructing an insulating rod into an indicator. Zhil,-kov.  
khoz. 10 no.7:26-27 '60. (MIRA 13:10)

1. Nachal'nik eksploatatsii Usovskogo otdeleniya Mosoblelektro.  
(Electric switchgear)

DYUKOV, V.

Device for determining the moisture content in plaster layers.  
Zhil.-kom. khoz. 10 no.10:25 '60. (MIRA 13:10)

1. Nachal'nik ekspluatatsii Usovskogo otdeleniya Mosoblenergo.  
(Moisture--Measurement) (Plaster)

DYUKOV, V.

Two suggestions for greater efficiency. Zhil.-kom. khoz. 10 no.12:23-24 '60. (MIRA 13:12)

1. Nachal'nik ekspluatatsii Usovskogo otdeleniya Mosoblelektre.  
(Electric insulators and insulation)

SEDOV, N.N.; SPIVAK, G.V.; DYUKOV, V.G.

Use of an emission electron microscope in studying semiconductors  
and dielectrics. Izv. AN SSSR. Ser. fiz. 27 no.9:1173-1178 S  
'63. (MIRA 16:9)

1. Fizicheskiy fakul'tet Moskovskogo gosudarstvennogo universiteta  
im. M.V.Lomonosova.

(Electron microscopy)

L 27642-66 EWT(1) IJP(c)

ACC NRAP6015755

(A, N)

SOURCE CODE: UR/0048/66/030/005/0742/0748

AUTHOR: Spivak, G.V.; Dyukov, V.G.; Sedov, N.N.; Nevzorov, A.N.

ORG: Physics Department, Moscow State University im. M.V. Lomonosov (Fizicheskiiy fakultet Moskovskogo gosudarstvennogo universiteta)

TITLE: A stroboscopic secondary-emission electron microscope /Report, Fifth All-Union Conference on Electron Microscopy held in Sumy 6-8 July 1965/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no. 5, 1966, 742-748

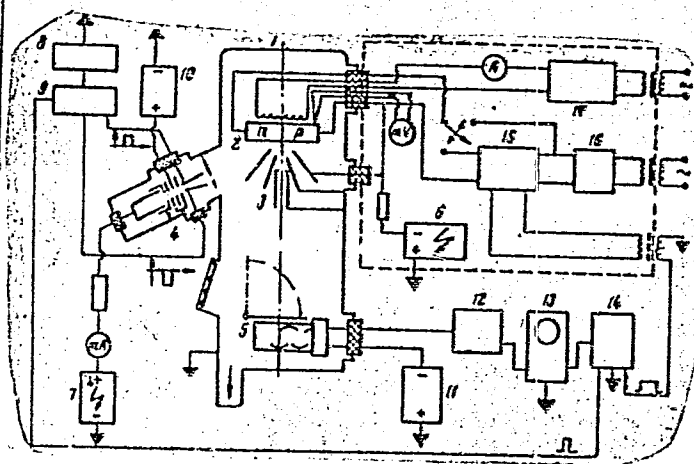
TOPIC TAGS: electron microscope, electron microscopy, silicon diode

ABSTRACT: The purpose of a stroboscopic or gating electron microscope is to observe the successive quasi-instantaneous stages of dynamic processes; if the frequency of the investigated process is synchroized with the gating there will be obtained stationary images of the surface structure regardless of the frequency characteristics of the screen. In the case of an emission system with a three-electrode objective a stroboscopic regime can be realized in different ways: supply of the microscope with high-voltage pulses, modulation of the potential on the focusing electrode, or deflection of the beam by means of appropriate deflecting plates. In the instrument employed in the present work pulse modulation was employed (V.G. Dyukov, G.V. Spivak, N.N. Sedov, and V.V. Evdokimov, Proc. III Europ. Reg. Conf. on Electron Microscopy, V.A., p. 283, Prague, 1964). A block diagram of the microscope and associated electronic equipment

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ACC NR: AP6015755



Block diagram of the stroboscopic secondary emission microscope with high time resolution: 1) microscope column, 2) specimen with thermocouple and heater, 3) optics of the apparatus, 4) pulsed ion gun, 5) screen and secondary-electron multiplier, 6) high-voltage rectifier (0 to 50 kV), 7) 5 kV rectifier for the ion source, 8) power supply for the pulse amplifier, 9) strobe pulse amplifier, 10) power supply for ion beam focusing, 11) 5 kV rectifier for the secondary-electron multiplier, 12) wide-band amplifier, 13) oscillograph, 14) generator of shifted pulses, 15) pulse shaping circuit, 16) rectifier supplying bias to the specimen and feeding the shaping circuit 15, 17) rectifier supplying the specimen heater. The section outlined by dashes operates at the high potential.

fier, 13) oscillograph, 14) generator of shifted pulses, 15) pulse shaping circuit, 16) rectifier supplying bias to the specimen and feeding the shaping circuit 15, 17) rectifier supplying the specimen heater. The section outlined by dashes operates at the high potential.

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ACC NR: AP6015755

is shown in the figure. Some of the parameters of the equipment and particularly of the ion source used for inducing the secondary emission are described in the paper. The microscope was used for investigation of a number of transient processes on the surface of semiconductors, junctions, and the like. Static and stroboscopic micrographs of the surface of a diffused silicon diode are reproduced; in the stroboscopic regime there is revealed (as a dark band) the region of potential drop in the base of the diode. Orig. art. has: 6 figures. [15]

SUB CODE: 09, 20/ SUBM DATE: none/ ORIG REF: 009/ OTH REF: 002/ ATD PRESS: 500/

Card 3/3

SEDOV, N.N.; SPIVAK, G.V.; DYUKOV, V.G.

Use of an emission electron microscope in measuring the potential distribution in a p-n junction. Izv. AN SSSR. Ser. fiz. 27 no.9: 1179-1183 S '63. (MIRA 16:9)

1. Fizicheskiy fakul'tet Moskovskogo gosudarstvennogo universiteta im. Lomonosova.

(Electron microscopy) (Junction transistors)

DYUKOV, V. G.; SPIVAK, G. V.; SEDOV, N. N.; YEVDOKIMOV, V. V.

"Über die Beobachtung der dynamischen Vorgänge in der p-n Übergängen mit Hilfe von dem Emissionselektronenmikroskop."

report submitted for 3rd European Regional Conf, Electron Microscopy, Prague, 26 Aug-3 Sep 64.

L 27641-66 EWT(1) IJP(c)

ACC NR: AP6015756

(A, N)

JR/0048/66/030/005/0749/0753

47  
46  
B

AUTHOR: Spivak, G.V.; Dyukov, V.G.; Sedov, N.N.; Nevzorov, A.N.

ORG: Physics Department, Moscow State University im. M.V.Lomonosov (Fizicheskii fakul-  
tet Moskovskogo gosudarstvennogo universiteta)

TITLE: Observation of transient processes in silicon diodes by means of a stroboscopic emission microscope /Report, Fifth All-Union Conference on Electron Microscopy held in Sumy 6-8 July 1965/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no. 5, 1966, 749-753

TOPIC TAGS: electron microscopy, silicon diode, pn junction

ABSTRACT: In the introductory paragraphs note is made of the advantages of employing a stroboscopic or gating electron microscope for studying transient processes in semi-conductors and observing the dynamics of microfields. In the work described in the present paper the stroboscopic microscope diagramed in the preceding report by the authors (see Abstract AP6015755) was used to observe the individual phases of establishment of direct current flow in silicon diodes. It is pointed out that the time resolution of the given electron microscope approaches the nanosecond range. A special simple resistance-capacitance circuit with a vacuum tube was employed to provide the

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ACC NR: AP6015756

requisite dc pulse repetition rate. Micrographs of the surface of a diffused silicon diode, of a p-n junction in a mesa-diode under - 40 V bias and of a section of an alloyed diode are reproduced in the text together with oscillograms of the dc pulse and the transient process in the case of one experiment. The effects revealed by the micrographs are discussed. Further experiments were concerned with investigating the influence of temperature on the structure of a p-n junction; the results are very briefly described: heating to 260°C resulted in a 200 ohm reduction of the back resistance of the diode. The authors are grateful to A.E. Yunovich for discussion of the results. Orig. art. has: 5 figures. [15]

SUB CODE: 09, 20/

SUBM DATE: none/

ORIG REF: 002/

OTH REF: 001/

ATD PRESS: 5101

Card 2/2

L 36426-66 EWT(1) IJP(c)

ACC NR: AP6015762

(A, N)

SOURCE CODE: UR/0048/66/030/005/0769/0773

AUTHOR: Spivak, G. V.; Sedov, N.N.; Dyukov, V.G.; Tavetkova, L. I.

52

ORG: Physics Department, Moscow State University im. M.V.Lomonosov (Fizicheskiy fakul'tet Moskovskogo gosudarstvennogo universiteta)

TITLE: A two-electrode immersion objective with a magnetic field at the cathode  
Report, Fifth All-Union Conference on Electron Microscopy held in Sverdlovsk 6-8 July 1965/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no. 5, 1966, 769-773

III

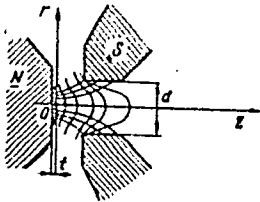
TOPIC TAGS: electron microscope, electron field, magnetic field, electromagnetic lens

ABSTRACT: The authors discuss an immersion objective employing both electric and magnetic fields. A section of the lens showing lines of force and equipotentials is presented in the figure. In this lens the magnetic pole pieces serve also as electrodes, and the object is fastened to the cathode (the "N" pole piece in the figure). If the pole pieces are not saturated, the electric and magnetic lines of force coincide. This condition is not necessary for focusing, but it greatly simplifies the calculations. Conditions for focusing are derived. There is a sequence of focusing conditions, in each of which the electron completes a different integral number of Larmor revolutions while traveling from the cathode to the image plane. The aberrations of the lens are not discussed and no formula is given for the magnification. A microscope

Card 1/2

L 36426-66

ACC NR: AP6015762



Cross section of the immersion objective

employing the immersion objective under discussion was constructed. Electron emission from the object was stimulated by ion bombardment, and the object was imaged directly on a photographic plate by the immersion objective without the assistance of other optical elements. The theoretical focusing conditions were verified. Electron micrograms are presented of a vidicon screen and of an etched copper surface (the latter at a magnification of 1000). The microscope was characterized by a small depth of focus. The image contrast could be greatly altered by varying the anode potential through some tens of volts about its value of approximately 35 kV. Orig. art. has: 7 formulas and 5 figures.

SUB CODE: 20/

SUBM DATE: 00/

ORIG REF: 003/

OTH REF: 005

Card 2/2 *gd*

ACC NR: AP7001335

SOURCE CODE: UR/0428/66/000/004/0106/0109

AUTHOR: Sirota, N. N. ; Brzhezinskiy, V. A. ; Dyukov, V. G. ; Karatsyuba, A. P. ; Korshunov, F. P. ; Lezzhov, Yu. F. ; Chernyshev, A. A.

ORG: none

TITLE: Investigation of the effects of reactor radiation on the structure and parameters of silicon p-n junctions [Papers presented at the First Conference on Radiation Solid State Physics held on 8 September 1965 in Kiev]

SOURCE: AN BSSR. Vestsi. Seryya fizika-matematichnykh navuk, no. 4, 1966, 106-109

TOPIC TAGS: silicon, silicon semiconductor, neutron radiation, micrograph, pn junction, pn silicon

ABSTRACT: An investigation was made of the influence of the gamma neutron radiation of a reactor on changes in the structure and electrophysical parameters of p-n junctions, prepared by the diffusion method on n-type silicon with specific resistances of 2, 10, and 250 ohm · cm. The samples were irradiated in the

Card 1/2

ACC NR: AP7001335

vertical channel of a reactor of the AN BSSR. It was found that radiation causes considerable changes in the volt-ampere characteristics of silicon diffusion p-n junctions. These changes increase with the resistance of the original silicon base from which the p-n junction is prepared. Radiation ( $1.10^{15}$  n/cm<sup>2</sup>) decreases the barrier capacity of the p-n junction and its dependence on the reverse voltage virtually disappears. The electron micrograph of the p-n junction, shifted on a bias of 30 v, showed no changes in the shape, location, and width of the p-n junction during this shift (after radiation). The width of the p-n junction after exposure was found to be independent of the bias voltage. It was possible to observe a drop of the direct voltage in the diode base having an initial specific resistance of 10 and 250 ohm · cm. It was also found that isochronous annealing at maximum of 350 C restores the direct branch of the volt-ampere characteristics of the p-n junction. Orig. art. has: 4 figures. [WA-095] [GC]

SUB CODE: 20/SUMB DATE: 25Jun66/ORIG REF: 003/OTH REF: 002/

Card 2/2

DYUKOV, Ya. A.

Occultations

Observations of lunar occultations of stars at the Kazan Municipal  
Astronomical Observatory. Astron. tsir. no. 129, 1952

9. Monthly List of Russian Accessions, Library of Congress, May 1953. Unclassified.

CHETKOV, V.A.; DYUKOV, Ya.Ya.

Water heating systems operating with the aid of steam injectors.  
Vod.i san.tekh. no.4:24-27 Ap '56. (MLRA 9:8)  
(Hot-water heating)

*Dyukov Ye Ye*

CHEPKOV, V.A.; DYUKOV, Ye.Ye.(Leningrad)

Border suction and blowing off currents in electric stoves of  
a smelting shop of the Novosibirsk Tin Plant. Vod.i san.tekh.  
no.7:28-31 JI '57. (MIRA 10:11)

(Tin)

(Smelting)

DYUKOV, Yu.I. (Irkutsk, ul. Vuzovskaya naberezhnaya, d.18)

Late secondary hemorrhage following surgery in necrosis of the  
pancreas. Nov. khir. arkh. no.1:108-110 Ja-F '60. (MIRA 15:2)

1. Kafedra fakul'tetskoy khirurgii (zav. - prof. B.D.Dobychin)  
Irkutskogo meditsinskogo instituta.  
(HEMORRHAGE) (PANCREAS...NECROSIS)

DYUKOV, Yu.I. (Ulan-Ude, Komsomol'skaya ul.12, kv.20)

Cysts of the abdominal cavity in children. Vest. khir. 92 no.4:  
125-126 Ap '64 (MIRA 18:1)

1. Iz khirurgicheskogo otdeleniya (nachal'nik Yu.I. Dyukov)  
bol'nitsy LVRZ (nachal'nik - D.S.Spadlov) g. Ulan-Ude,  
Buryatskoy ASSR.

DEKOVA, A.K., KUROVSKAYA, N.I., PANINA, Z.A., RASHETNIKOVA, M.I.,  
SULAYEVA, L.S., UTESHEV, A.B., VERBOLOBICH, P.A., POLOSUKHINA, T.YA.,  
KALFOVA, Z.N., VALITOVA, M.S., (USSR)

"Special Aspects of the Metabolism of Some Substances in  
Radiation Disease in Dogs."

Report presented at the 5th Int'l. Biochemistry Congress, Moscow,  
10-16 Aug 1961.

DYUKOVA, A. L.

Dyukova, A. L.

"The Effect of the Vegetative Nervous System on the Permeability of the Erythrocytes in the Dog to Ascorbic Acid." Kazakh State Medical Inst imeni V. M. Molotov. Alma-Ata, 1955 (Dissertation for the degree of Candidate in Medical Science)

SO: Knizhnaya letopis' No. 27, 2 July 19 55

~~DYUKOVA, A. I.~~

Influence of the vegetative nervous system on the penetration  
of ascorbic acid into the erythrocytes of a dog. Vitaminy  
no. 4:140-143 '59. (MIRA 12:9)

1. Kafedra biokhimii Kazakhskogo meditsinskogo instituta,  
Alma-Ata.  
(NERVOUS SYSTEM, AUTONOMIC) (ASCORBIC ACID) (ERYTHROCYTES)

DYUKOVA, A.P.

Composition of humus substances in bottom-land soils. Nauch.dokl.  
vys.shkoly; biol.nauki no.2:198-202 '60. (MIRA 13:3)

1. Rekomendovana kafedroy pochvovedeniya Moskovskogo gosudarstvennogo  
universiteta im. M.V. Lomonosova.  
(KLYAZ'MA VALLEY--HUMUS)

ZORINA, A.V.; ESTULINA, A.I., inzh.; BOGOSLOVSKIY, S.S., inzh. ;  
DEYEVA, N.A., inzh.; DYUKOVA, L.M., inzh.; MOBEL', B.I.,  
tekhn. red.; DEMKINA, N.F., tekhn. red.

[Time norms for machine and manual molding operations for iron, steel, and nonferrous metal founding in general machinery construction; batch and small-run production] Obshchemashinostroitel'nye normativy vremeni na mashinnuiu i ruchnuiu formovku liteirnykh form dlia chugunnogo, stal'nogo i tsvetnogo lit'ia; seriinoe i melko-seriinoe proizvodstvo. Moskva, Mashgiz, 1962. 322p.

(MIRA 15:7)

1. Moscow. Tsentral'noye byuro promyshlennykh normativov po trudu.
2. Nauchno-issledovatel'skiy institut aviatsionnoy tekhnologii  
(for all except Model', Demkina).

(Founding---Production standards)

DYUKOVA, Ye.

Selective study of marketing trends. Sov.torg. 33  
no.7:36-38 JI '60. (MIRA 13:7)  
(Marketing research)

VUKALOVICH, M.P., doktor tekhn.nauk; DZAMPOV, B.V., kand.tekhn.nauk;  
RASSKAZOV, D.S., kand.tekhn.nauk

Thermal properties of water and steam at pressures up to 1000  
kg./cm<sup>2</sup> and a temperature range of 300 to 1000° C. Teploener-  
getika 8 no.7:48-49 JI '61. (MIRA 14:9)

1. Moskovskiy energeticheskiy institut.  
(Water--Thermal properties)  
(Steam--Thermal properties)

GOLLAN, S.R.; NOVAK, E.; D'YULAI, L. [Guylai, L.]

Use of plastic devices in blood preservation and transfusion.  
Probl. gemat. i perel. Krovi 8 no.9:46-49 S '63. (MIRA 17:9)

1. Iz TSentral'nogo nauchno-issledovatel'skogo instituta  
perelivaniya krovi v Budapeshte.

DYUL'DINA, A.S.; MEYERSON, G.M.

Efficient use of disinfectant solutions. Vrach.delo no.11:111-113  
N '60. (MIRA 13:11)

1. Dezinfektsionnaya laboratoriya Kiyevskogo instituta epidemiologii  
i mikrobiologii.  
(DISINFECTION AND DISINFECTANTS)

AUTHORS: Abrikosov, N.Kh., Dyul'dina, K.A., Danilyan, T.A. <sup>SOV</sup>78-3-7-29/44

TITLE: Investigations of the System SnTe-PbTe (Issledovaniye sistemy SnTe-PbTe)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1958, Vol. 3, Nr 7, pp 1632-1636 (USSR)

ABSTRACT: The diagram of state and the thermoelectric properties of the system SnTe-PbTe, in which isomorphous compounds are formed, were investigated. In the ~~ternary~~ system Pb-Sn-Te continuous series of solid solutions form on the sector SnTe-PbTe. The electric conductivity and the thermoelectric conductivity of the alloys produced from SnTe and PbTe have the same type of conductivity. Modification of the properties of alloys produced from SnTe and PbTe is complicated. Alloys which are enriched with SnTe have a maximum of thermoelectric conductivity of positive value, but alloys enriched with PbTe have a thermoelectric conductivity of negative value. Electric conductivity passes through a minimum. There are 7 figures, 2 tables and 13 references.

Card 1/2

Investigations of the System SnTe-PbTe

SOV/78-3-7-29/44

SUBMITTED: June 26, 1957

1. Lead-tellurium-tin systems--Analysis    2. Lead-tellurium-tin  
systems--Electrical properties    3. Lead-tellurium-tin systems  
--Temperature factors

Card 2/2

SOV/78-4-10-22/40

3(2).  
 AUTHORS: Dudkin, L. D., Dyul'dina, K. A.  
 TITLE: Investigation of the System Cobalt - Tellurium  
 PERIODICAL: Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 10,  
 pp 2313 - 2319 (USSR)  
 ABSTRACT: Among the binary compounds with semi-conductor properties the  
 substances of the type metal<sub>transition</sub>-semi-conductor  
 (metal<sub>transition</sub> = transition metals, semi-conductor = semi-  
 conductor elements of the 3rd - 7th group of the periodic system)  
 form a special group which has been little investigated so far.  
 N. Kh. Abrikosov et al (Refs 1-3) carried out some investigations  
 on antimonides. The present paper continues this series. A number  
 of Co - Te-melts was investigated (Table 1) and the phase dia-  
 gram was constructed (Fig 2). The system shows two interphases.  
 The  $\gamma$ -phase melts with open maximum at approximately 1010°, the  
 $\beta$ -phase corresponds to the compound CoTe<sub>2</sub> and is caused by the  
 peritectic reaction  $\beta \rightleftharpoons \gamma + \text{liquid}$  at 749°. The  $\gamma$ -phase forms  
 with Co an eutectic melting at 960°. The investigation of the  
 micro-structure (Fig 4) confirmed the data of the thermal ana-

Card 1/2

Investigation of the System Cobalt - Tellurium

SOV/78-4-10-22/40

lysis. The radiograph (Fig 5) reproduce well the phase transition at increasing tellurium concentration. The thermoelectric properties of the melts reveal distinctly the boundaries of the  $\gamma$ -phase. The continuous variation within the phase itself indicates the berthollid-like character of the structure. Since the number of structural defects of the  $\gamma$ -phase is of the same order of magnitude as the number of atoms, no semi-conductor properties may be expected. Both the  $\gamma$ - and  $\delta$ -phase have apparently a metal structure. The  $\delta$ -phase possesses a marcasite lattice, the  $\gamma$ -phase a lattice derived from  $\text{CdJ}_2$ . [1] Abstracter's Note: disordered transition structures are denoted as berthollids (derived from the French chemist Berthollet)]. There are 6 figures, 1 table, and 11 references, 5 of which are Soviet.

SUBMITTED: June 21, 1958

Card 2/2

AIKSETEVA, I.V.; PUSHKAREVA, Z.V.; DYUL'DINA, S.N.

Synthesis of p-bis(  $\beta$ -chloroethyl)aminobenzoyl derivatives of  
some amino acids. Zhur.ob.khim. 33 no.10:3145-3147 0 '63.  
(MIRA 16:11)

ZOBOV, Ye.V.; SHCHELKUNOVA, M.S.; BABANOVA, Zh.I.; CHAPURIN, V.I.; SHEMELEVA, V.A.;  
DYUL'GER, T.B.; GINKU, A.I.

Anticorrosive coatings of the internal surfaces of tanks used for the  
storage and processing of wine and juices; preliminary report. Trudy  
MNIIPP 2:43-55 '62. (MIRA 16:4)

(Wine and wine making--Equipment and supplies)  
(Corrosion and anticorrosives)

DYUL'GER, T.B.; ZOBOV, Ye.V.

New type of linings for "Crown-Cork" capping of bottles containing fruit  
and berry juice. Trudy MNIIPP 2:96-101 '62. (MIRA 16:4)  
(Bottling--Equipment and supplies)

DYUL'GER, T.B.; KIRIYENKO, G.K.; GITENSHTEYN, B.M.

Testing the crown cork lining for beer bottling. Spirt.prom. 29 no.5:  
17-20 '63. (MIRA 17:2)

1. Moldavskiy nauchno-issledovatel'skiy institut pishchevoy promyshlennosti  
(for Dyul'ger, Kiriyeenko). 2. Kishinevskiy pivovarennyy zavod (for Giten-  
shteyn).

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resin ED-5 resin, ED-6 resin

Author's Certificate introduces a method for protecting metal and  
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The coating surface is then rendered  
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*Submitted: 27 Nov 61*

DYULUNDZHEV, D. R.

Natural Quartz-silicate Schists as Substitutes for Refractories

TEKHNIKA PROMISLENOST (Heavy Industry) Issue #9; 37; September 1955

MIKIFOROV, G.A.; DYUMAYEV, G.A.

Synthesis of 3,5-di-tert-butyl-4-hydroxybenzylamine and  
3,5-di-(1',1'-dimethylpropyl)-4-hydroxybenzylamine. Izv.  
AN SSSR. Otd. khim. nauk no. 1:171-172 Ja '61. (MIRA 14:2)

1. Institut khimicheskoy fiziki AN SSSR.  
(Benzylamine)

5(3)

SOV/153-58-2-13/30

AUTHORS:

Bazilevskaya, G. I., Baynova, M. S., Gura, D. V., Dyumayev.  
K. M., Preobrazhenskiy, N. A.

TITLE:

Synthesis of the Alkaloid Cocaine (Sintez alkaloida kokaina)

PERIODICAL:

Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya  
tekhnologiya, 1958, Nr 2, pp 75-81 (USSR)

ABSTRACT:

At the beginning, use, occurrence, and structural formula of cocaine are repeated. According to the structure theory, four racemic stereoisomers of cocaine are possible: racemic cocaine (Ref 3), racemic pseudo-cocaine (Ref 4), racemic allococaine (Ref 5), and racemic allo-pseudo-cocaine (Refs 5,6), as well as a corresponding number of optically active compounds. Various methods of synthesis for cocaine have been published (Refs 3,7,8-11). In the present paper, the synthesis according to the scheme (Page 76) is described. Pharmacological investigations in the Minskiy meditsinskiy institut (Minsk Medical Institute), carried out by Professor K. S. Shadurskiy and N. A. Iskarev, Graduate Student, on samples of the authors proved that racemic cocaine is not inferior to the natural levorotary cocaine regarding its local-anaesthetic properties (on the

Card 1/3

Synthesis of the Alkaloid Cocaine

SOV/153-58-2-13/30

cornea of the rabbit). But, on the other hand, it is less toxic. The investigations of the latter two scientists (Ref 14) led to the conclusion that it is frequently advisable to use racemic hydrochloric cocaine without cleaving it in antipodes. In the experimental section the synthesis of the following compounds, being cocaine constituents, is described: 1) 2,5-diethoxy-2,5-dihydrofuran (I), 2) 2,5-diethoxy-tetrahydrofuran (II), 3) di-potassium-salt of the monomethylester of acetone-dicarboxylic acid, 4) methyl-ester of the tropan-3-one-2-carboxylic acid (III), 5) the methyl-esters of racemic ecgonine (IV a) and of racemic pseudo-ecgonine (IV b), 6) racemic cocaine (base), 7) racemic hydrochloric cocaine. Conclusions: 1) In this paper the method of synthesis of the salt mentioned in 7) was elaborated. 2) The conditions of condensation of succin-dialdehyde with methylamine and with the salt mentioned in 3) to the compound (III) have been investigated. 3) A method of quantitative determination of compound (III) in the reaction mixture after the formation of the water-insoluble reineckate was suggested. 4) A stereo-oriented reduction of compound (III) to the methyl ester of racemic ecgonine was realized. There are 14 references. 4 of which are Soviet.

Card 2/3

Synthesis of the Alkaloid Cocaine

SOV/153-58-2-13/50

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii (Moscow  
Institute of Fine Chemical Technology)  
Kafedra tekhnologii lekarstvennykh i dushistykh veshchestv  
(Chair of Technology of Drugs and Perfumes)

SUBMITTED: October 9, 1957

Card 3/3

79-28-4-55/60

AUTHORS: Bazilevskaya, G. I., Gura, D. V., Baynova, M. S.,  
Dyumayev, K. M., Sarycheva, I. K., Preobrazhenskiy, N. A.

TITLE: Synthesis of Tropane-3- $\alpha$ -ol, Tropine (Sintez tropan-3- $\alpha$ -ola,  
tropine)

PERIODICAL: Zhurnal Obshchey Khimii, 1958, Vol. 28, Nr 4, pp. 1097-1105 (USSR)

ABSTRACT: The representatives of the tropane group (cocaine, atropine, tropine and also their natural and synthetic derivatives) play a considerable part among alkaloids. The presence of substituents in the pyrrolidine - piperidine grouping causes the possibility of different stereoisomeric forms of the tropane alkaloids. Thus, 4 configurations, and according to it 4 racemic isomers are known for cocaine. It was found that the compounds synthesized in 1956 allococaine, allo-pseudo-cocaine and the tropeines are derivatives of tropane-3-ole of tropine (formula I) while natural cocaine and pseudo-cocaine have the structure of pseudo-tropine (formula II) (Ref 1).

Card 1/4

79-28-4-55/60

Synthesis of Tropine 3-Oleol, Tropine



These two tropine-3-ols can be represented by reduction of the corresponding ketone tropinone. For the production of one or the other isomer not only the selection of the hydration agent but also the conditions of the carrying out of the reaction play an important part. In the present work the sterically directed reduction of tropinone to tropine carried out by the authors is described. Synthesis of tropinone was made by 3 methods described in technical publications: 1) Karrer and Alagil (Ref 6); 2) Willstätter, Wolfes and Mäder (Ref 8); 3) Gal, Simoniy and Tokar (Ref 10). In order to improve these 3 methods some modifications were made. Succinic dialdehyde which is necessary as starting product for the synthesis of tropinone according to the last two methods was represented by the authors according to 4 different methods which are all given in detail. On

Card 2/4

79-28-4-55/60

Synthesis of Tropane-3- $\alpha$ -ol, Tropine

this occasion acetylene or ethyl acetal of the bromoacetaldehyde or succinic diethyl ester or furane served as starting product. The method of representation based on succinic diethyl ester was elaborated anew by the authors. The authors investigated a series of methods in order to find conditions for a stereo directed reduction of tropinone to tropine: reduction with sodium amalgam as well as electrolytic and catalytic hydration under different conditions. Tropane-3-oles with different content of stereoisomers are formed according to reaction conditions, but only in the presence of a nickel catalyst at 60 atmospheres pressure and 20° they succeeded in obtaining tropine without a content of pseudo-tropine. The thus synthesized tropine proved identical with that isolated from natural alkaloid atropine.

All synthesis reactions mentioned are described in detail in an extensive experimental part. There are 29 references, 1 of which is Soviet.

Card 3/4

79-28-4-55/60

Synthesis of Tropane-3- $\alpha$ -ol, Tropine

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii  
(Moscow Institute for Fine Chemical Technology)

SUBMITTED: April 18, 1957

Card 4/4

DYUMAYEV, K. M., Cand Chem Sci -- (diss) "Synthesis investigation in the field of isomers of cocaines." Moscow, 1960. 9 pp; (Ministry of Higher and Secondary Specialist Education RSFSR, Moscow Inst of Fine Chemical Technology im M. V. Lomonosov, Chair of Chemistry and Technology of Fine Organic Compounds); 160 copies; free; (KL, 17-60, 141)

S/079/60/030/05/13/074  
B005/B002

AUTHORS: Bazilevskaya, G. I., Baynova, M. S., Dyumayev, K. M.,  
Preobrazhenskiy, N. A.

TITLE: Synthetic Investigations in the Field of Isomeric Cocaine.  
V. Synthesis of Methyl Ester of Tropanol-3 $\alpha$ -carboxylic  
Acid-2 $\beta$  (Alloecgonine) and of Tropanol-3 $\alpha$ -carboxylic  
Acid-2 $\alpha$  (Allopseudoecgonine)

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, No. 5, pp. 1458-1461

TEXT: The methyl ester of tropanol-3-carboxylic acid-2 may occur in 4 racemic and 8 optically active forms, whose structural formulas are given (I-IV and the corresponding antipodes and racemates). Only the two forms I and II occur in nature. No more than a few little informative data are contained in publications concerning the other two forms III and IV (Refs. 1,3,4). The authors of the present paper investigated a number of catalytic, electrochemical, and chemical methods of hydrogenation, in order to obtain the isomeric methyl esters of alloecgonine (racemate of III) and of allopseudoecgonine (racemate of IV) from the

Card 1/A

Synthetic Investigations in the Field of  
Isomeric Cocaine. V. Synthesis of Methyl Ester  
of Tropanol-3 $\alpha$ -carboxylic Acid-2 $\beta$  (Alloecgonine)  
and of Tropanol-3 $\alpha$ -carboxylic Acid-2 $\alpha$   
(Allopseudoecgonine)

S/079/60/030/05/13/074  
B005/B002

methyl ester of tropanone-3-carboxylic acid-2. It depends on the conditions of hydrogenation and on the nature of the reduction agent, as to which isomer is formed. In the catalytic hydrogenation of the methyl ester of tropanone-3-carboxylic acid-2 with Raney nickel as a catalyst, an oily substance was obtained, whose composition and molar refraction correspond to the methyl ester of ecgonine; other constants, however, do not agree with one another. The wide boiling range of the substance obtained and the fact that its iodine methyrate already decomposes at 75° beneath its melting point, allow the conclusion to be reached that the substance synthesized is a mixture of isomers III and IV. Refractive index and specific weight of the oil obtained are lower than the corresponding values of ecgonine methyl ester. This is indicative of the fact that the mixture consists in the main of isomers with 2,3-trans-structure; furthermore, the good solubility of oil in ether allows the conclusion that the methyl ester of alloecgonine is chiefly obtained on the catalytic hydrogenation of the methyl ester of tropanone-3-carboxylic

Card 2/4

Synthetic Investigations in the Field of  
Isomeric Cocaine. V. Synthesis of Methyl Ester  
of Tropanol-3 $\alpha$ -carboxylic Acid-2 $\beta$  (Alloecgonine)  
and of Tropanol-3 $\alpha$ -carboxylic Acid-2 $\alpha$   
(Allopseudoecgonine)

S/079/60/030/05/13/074  
B005/B002

acid-2 in the presence of Raney nickel. The amount of the simultaneously resulting isomeric methyl ester of allopseudoecgonine grows with the conditions of hydrogenation becoming more rigorous. The authors succeeded in separating the two isomeric methyl esters from each other by way of the fractionated distillation of the oil obtained and by the fractionated crystallization of the picrates. Hence, the described reduction of the methyl ester of tropanone-3-carboxylic acid-2 proceeds in steric orientation and leads to the formation of 3-hydroxy-axial isomers. All the operations (catalytic hydrogenation, preparation of picrates, fractionated crystallization, preparation of hydrochlorides of the two isomeric methyl esters) are described in great detail in an experimental part. Yields, melting points (boiling points respectively), and elementary analyses are specified for all of the compounds described. There are 8 references: 3 Soviet, 2 English, and 3 German. ✓

Card 3/4

Synthetic Investigations in the Field of S/079/60/030/05/13/074  
Isomeric Cocaine. V. Synthesis of Methyl Ester B005/B002  
of Tropanol-3 $\alpha$ -carboxylic Acid-2 $\beta$  (Alloecgonine)  
and of Tropanol-3 $\alpha$ -carboxylic Acid-2 $\alpha$   
(Allopseudoecgonine)

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii (Moscow  
Institute of Fine Chemical Technology)

SUBMITTED: June 2, 1959

Card 4/4

BAZILEVSKAYA, G.I.; BAYNOVA, M.S.; DYUMAYEV, K.M.; PREOBRAZHENSKIY,  
N.A.

Investigations in the synthesis of isomeric cocalnes. Part 6:  
Synthesis of methyl esters of  $3\alpha$ -tropanol- $2\alpha$ -carboxylic acid,  
pseudoecgonine, and  $3\beta$ -tropanol- $2\beta$ -carboxylic acid,  
ecgonine. Zhur.ob.khim. 30 no.6:2088-2091 Je '60.  
(MIRA 13:6)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii.  
(Eggonine) (Pseudoecgonine)

89406

S/062/61/000/001/015/016  
B101/B220

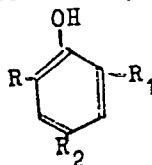
5.3400 1109

AUTHORS: Dyumayev, K. M., Nikiforov, G. A., and Silayev, Yu. V.

TITLE: Inhibitors of free radical reactions

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk,  
no. 1, 1961, 168-170

TEXT: The purpose of the present study was to obtain inhibitory, screened phenols of the general type



Homologs of ionol(2,6-di-tert-butyl-4-methyl phenol) with ortho-substituents of C<sub>5</sub> to C<sub>8</sub> were synthesized by alkylation of p-cresol with olefins.

Tertiary alcohols were obtained by reaction of acetone with magnesium alkyl halide and dehydrated to olefins by means of H<sub>2</sub>SO<sub>4</sub>. The olefins

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were added to p-cresol in the presence of  $H_2SO_4$  at  $65-70^\circ C$ . Thus, the following compounds resulted: 2,6-di-(1',1'-dimethyl-propyl)-4-methyl phenol (I); 2,6-di-(1',1'-dimethyl-butyl)-4-methyl phenol (II); 2,6-di-(1',1'-dimethyl-amyl)-4-methyl phenol (III); and 2,6-di-(1',1'-dimethyl-hexyl)-4-methyl phenol (IV). The infra-red spectra of these compounds are shown in a figure. Ter-Vartanyan, Shershavova, and Solov'yeva investigated the inhibitory effect of these compounds by comparing their induction period for the oxidation of lard with that of ionol as standard. The inhibitory effect did not differ from that of ionol. In particular, however, the length of the chain was found to have no influence on the inhibitory effect. Of special interest were the higher stability in air and the better solubility of the compound (I) (compared with the other compounds). The reason for the poor yield of products with  $C_6 - C_8$  as compared to those with  $C_4 - C_5$  has not been studied, but is attributed to more intensive polymerization of the  $C_6 - C_8$  olefins. H. M. Emanuel' is mentioned. There are 1 figure, 1 table, and 11 references: 9 Soviet-bloc and 4 non-Soviet-bloc.

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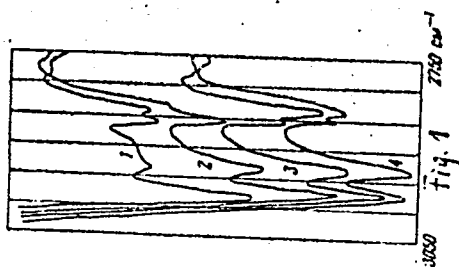
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Inhibitors of free radical reactions

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B101/B220

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR  
(Institute of Chemical Physics, Academy of Sciences USSR)

SUBMITTED: June 7, 1960



Legend to Fig. 1:  
1) compound (I); 2) compound  
(II); 3) compound (III);  
4) compound (IV).

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51610

0/61/41/002/015/027  
05/B110

AUTHORS: Nikiforov, G. A. and Dymayev, E. M.

TITLE: Inhibitors of 1,4-benzyl reactions. Self-alkylation of  
3,5-di-tert-butyl-4-hydroxy benzyl amine

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 11, no. 2, 1961, 368-370

TEXT: The self alkylation of 3,5-disubstituted 4-hydroxy benzyl amines which form quantitative yields of corresponding tribenzyl amines under soft conditions was discussed. Difficulties (difficult separation of primary, secondary, and tertiary amines and complicated synthesis in several stages) arising with the usual methods are thus eliminated. Tri-(3,5-di-tert-butyl-4-hydroxy) benzyl amine (II) was found to form even in the crystallization of 3,5-di-tert-butyl-4-hydroxy benzyl amine (I) from rectified alcohols. The same occurs when an alcoholic amine solution of I is left standing in nitrogen atmosphere for 48 - 72 hr at 20°C. Increases of temperature and water content in the alcohol accelerate this process. When using dioxane and pyridine at 75 - 80°C, the same crystallization product with a melting point of 131 - 131.5°C is obtained. The infrared

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spectra of II were compared with spectra of similarly structured compounds (tribenzyl amine, 2,6-di-tert-butyl-4-methyl phenol, and 2,6-di-tert-butyl phenol). The occurrence of a new band in II at  $1040, 1030 \text{ cm}^{-1}$  is explained by a C-N bond of tertiary amine. The nuclear-magnetic resonance spectra of II, 2,6-di-tert-butyl phenol, and tribenzyl amine showed that proton signals of the  $\text{CH}_3$  groups were not obtained in the second but in the first and third cases. The signal intensities showed that the numbers of phenyl protons and  $\text{CH}_3$  groups were equal. Hence, it is concluded that

benzyl radicals are contained in the product. The chemical shift of hydroxyl proton signals of 2,6-disubstituted phenols approximately equals that of the proton signal on monosubstituted phenol when the signal is extrapolated for an infinite dilution (Ref. 3, see below). The signal shifted in this region is due to a rupture of the hydrogen bonds. The authors attempt to explain the inhibiting effect of phenols by a reduced or lacking ability of radical formation when introducing substituents into the o-position. This explains the decreasing inhibiting activity in the sequence of 2,6-dimethyl-, 2,6-diisopropyl-, and 2,6-di-tert-butyl-4-methyl phenols (Ref. 3, see below). The synthesis of tri-(3,5-di-tert-butyl-4-hydroxy) benzyl amine definitely confirms the structure assumed Card 2/1

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for II. Self-alkylation of I by boiling for several hours in anhydrous organic solvents (pyridine, higher alcohols, dioxane, and tetrahydrofuran) was unsuccessful. The water content of the medium plays a decisive part in self-alkylation. II is not obtained by boiling hydrobromide or hydrochloride of I and 75% alcohol for three hours. When left standing, amine I gradually loses  $NH_3$  and forms II. A temperature elevation accelerates this process. II is obtained from I at 160 - 170°C in a nitrogen flow. The studies are being continued. N. M. Emanuel<sup>1</sup>, Corresponding Member AS USSR, is thanked for suggesting the subject, T. N. Dymayeva and V. F. Bystrov for taking spectra, and A. A. Volod'kin for providing butyl phenol. There are 2 figures, 1 table, and 7 references: 2 Soviet and 5 non-Soviet. The four references to English-language publications read as follows: Ref. 2: C. M. Huggins, G. C. Pimentel, J. N. Shoolery, J. Phys. Chem., 60, 1311 (1956); Ref. 3: G. Miller, E. Quakenbush, J. Am. Oil Chem. Soc., 24, 249 (1947); T. Fujisaka, J. Chem. Soc. Japan. Pure Chem. Soc. 77, 727 (1956); T. Campbell, J. Org. Chem., 22, 458 (1947).

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR  
(Institute of Chemical Physics of the Academy of Sciences  
USSR)

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S/020/61/141/002/015/027  
B103/B110

PRESENTED: May 12, 1961, by V. N. Kondrat'yev, Academician

SUBMITTED: May 9, 1961

X

Card 4/4

DYUMAYEV, K.M.; SMIRNOV, L.D.; BYSTROV, V.F.

Sterically hindered 3-hydroxypyridines. Report No.1: Synthesis and determination of the structure of some 2,6-dialkyl-4-(N,N-dialkyl) aminomethyl-3-hydroxypyridines. Izv. AN SSSR. Otd.khim.nauk no.5: 883-887 My '62. (MIRA 15:6)

1. Institut khimicheskoy fiziki AN SSSR.  
(Pyridine--Spectra) (Steric hindrance)

NIKIFOROV, G.A.; DYUMAYEV, K.M.; VOLOD'KIN, A.A.; YERSHOV, V.V.

Inhibitors of free radical reactions. Report No.3: Formylation  
of 2,6-dialkylphenols. Izv. AN SSSR.Otd.khim.nauk no.10:1836-1838  
0 '62. (MIRA 15:10)

1. Institut khimicheskoy fiziki AN SSSR.  
(Phenol) (Formylation) (Benzaldehyde)

SMIRNOV, L. D.; DYUMAYEV, K. M.; SHUYKIN, N. I.; BEL'SKIY, I. F.

Synthesis of 2,4,6-trialkyl-3-hydroxypyridines. Izv. AN SSSR  
Otd. khim. nauk no.12:2246-2247 D '62. (MIRA 16:1)

1. Institut organicheskoy khimii im. N. D. Zelinskogo AN SSSR  
i Institut khimicheskoy fiziki AN SSSR.

(Pyridine)

DYUMAYEV, K.M.; BELOSTOTSKAYA, I.S.

Synthesis of trisubstituted phenylethylamines by catalyzed  
reduction of  $\alpha$ -nitrostyrenes. Zhur.ob.khim. 32 no.8:2661-2663  
Ag '62. (MIRA 15:9)

1. Institut khimicheskoy fiziki AN SSSR.  
(Phenethylamine) (Styrene)

Dyumayev, K. M.

AID Nr. 982-3 4 June

FREE-RADICAL REACTION INHIBITORS AS POTENTIAL RADIATION-  
PROTECTIVE SUBSTANCES (USSR)

Nikiforov, G. A., and K. M. Dyumayev. IN: Akademiya nauk SSSR.  
Izvestiya, Otdeleniye khimicheskikh nauk, no. 4, Apr 1963, 721-723.

S/062/63/000/004/013/022

A series of substituted hydroxyphenylethylamines containing a hindered phenol group was synthesized at the Institute of Chemical Physics, Academy of Sciences USSR, in an attempt to apply the well known ability of hindered phenols to inhibit free-radical reactions to biological protection against ionizing radiation. The following method of synthesis of (3,5-dialkyl-4-hydroxyphenyl)ethylamines was developed. The interaction of 4-hydroxyl-3,5-dialkylbenzaldehydes with nitromethane in the presence of alkaline catalysts, such as ammonium acetate, was

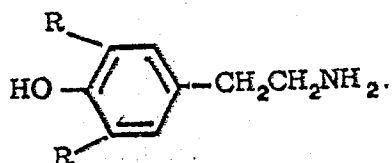
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AID Nr. 982-3 4 June

FREE-RADICAL REACTION INHIBITORS [Cont'd]

S/062/63/000/004/013/022

used to prepare the derivatives of  $\alpha$ -nitrostyrene as intermediates, which were then hydrogenated over platinum black to the 3,5-dialkyl-4-hydroxyphenyl-ethylamines,



The 3,5-dimethyl-, -diisopropyl-, -di-tert-butyl-, and -dicyclohexyl- compounds were prepared in 51.3 to 77.1% yields at reaction temperatures of 86 to 107°C. The amine hydrochlorides melted at 197 to 265.5°C. [BN]

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SMIRNOV, L.D.; LEZINA, V.P.; BYSEPOV, V.F.; DYUMAYEV, K.M.

Synthesis of pyridoxine (vitamin B<sub>6</sub>) analogs. Izv. AN SSSR. Otd.khim.  
nauk no.4:752-754 Ap '63. (MIRA 16:3)

1. Institut khimicheskoy fiziki AN SSSR.  
(Pyridoxol)

ACCESSION NR: AP3000127

S/0062/63/000/005/0890/0893

AUTHOR: Smirnov, L. D.; Sholina, S. I.; Kruglyakova, K. Ye.; Dymayev, K. M.

TITLE: Space restricted 3-oxypyridines. Report 2. Synthesis and the study of the antioxidizing properties of some 2,6-dialkyl-3-oxypyridines and 2,6-dialkyl-4-(dialkylamino)methyl-3-oxypyridines

SOURCE: AN SSSR. Izvestiya. Otdeleniye khimicheskikh nauk, no. 5, 1963, 890-893

TOPIC TAGS: synthesis of 2-alkyl-3-ox-6-methylpyridines, antioxidants, 2-ethyl-6-methyl-3-oxypyridine

ABSTRACT: The present work is devoted to the synthesis and study of the properties of antioxidants 2,6-dialkyl-3-oxypyridines and 2,6-dialkyl-4-(dialkylamino)methyl-3-oxypyridines, whose structures are closely related to vitamin B6. The synthesis of a number of 2-alkyl-3-ox-6-methylpyridines by reaction of 2-acyl-5-methylfurans with ammonia has been realized. The antioxidative effect of some 2,6-dialkyl-4-dialkylaminomethyl-3-oxypyridines has been studied in the oxidation reaction of methyloleate. The most effective antioxidant was found to be 2-ethyl-6-methyl-3-oxypyridine. The introduction of dimethylaminomethyl, methylpiperidine and methylmorpholine groups into the 4th position of 2,6-dialkyl-3-oxypyridines practically

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